



Docket No.: 3254-0121PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Young-Nam HWANG et al.

Application No.: 10/501,910

Confirmation No.: 8720

Filed: July 20, 2004

Art Unit: 1771

For: A COMPOSITE SHEET USED FOR
ARTIFICIAL LEATHER WITH LOW
ELONGATION AND EXCELLENT
SOFTNESS

Examiner: A. T. Piziali

DECLARATION UNDER 37 CFR 1.132

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, HWANG, Young-Nam, do declare and say as follows:

1. I am a graduate from Seoul National University on February 24, 1994, specializing in textile and polymer sciences.
2. I have been employed by Kolon Industries, Inc., from November 1, 1993 to the present in the position of Senior Research at Kolon Central Research Park.
3. The following comparative tests were performed under my direction and control:

Samples Nos. 1 and 2 were conducted to point out one of the features of the present invention wherein the ultrafine fiber constituting the unwoven fabric and the ultrafine fiber

constituting the woven (knitted) fabric are made of the same resin.

Thus Samples 1 and 2 shown in the Table below were prepared in the same manner, using the same method as that in Example 1 of the present application and these samples were also dyed under the same dyeing conditions and those samples are attached to the present Declaration for the Examiner's observation.

TABLE

| Sample No. | Non-Woven | | SCRIM (Woven Fabrics) | | Reference |
|------------|--|-------------|--|-------------|---|
| | Kind of fine fiber | Fineness | Kind of fine fiber | Fineness | |
| No. 1 | Polyethylene Terephthalate (PET) | 0.07 denier | Polyethylene Terephthalate (PET) | 0.06 denier | Same as the present invention |
| No. 2 | Polyethylene Terephthalate (PET) | 0.07 denier | Polyamide (Nylon) | 1.05 denier | Different from the present invention |

As can be seen by referring to the Table, Sample 1 was polyethylene terephthalate (PET) for both the non-woven fiber and the woven fiber whereas Sample 2 uses polyethylene terephthalate (PET) for the non-woven fiber and a polyamide (Nylon) for the woven fiber.

By utilizing the same resin for both the non-woven and woven fibers, dyeing compatibility between the non-woven and woven fibers is achieved when using dispersed dyes, resulting in a composite sheet (Sample 1) having a deep color and excellent appearance. Also, the composite sheet of the present invention (Sample 1) exhibits excellent softness when compared to Sample 2 which utilizes different resins for the non-woven and woven fibers.

Samples 1 and 2 were further evaluated as to color, touchness and roughness with the following results:

DATA FOR COLOR

| | L* | a* | b* |
|--------------|------|------|-------|
| Sample No. 1 | 44.9 | -5.4 | -11.6 |
| Sample No. 2 | 47.0 | -5.7 | -11.9 |

The parameters L*, a* and b*, which are well known in the textile art, were measured using a standard color matching machine. The L* parameter identifies the lightness of the colors of Samples 1 and 2. Thus a lower value for L* indicates that the deepness of the color is increased. Thus, since Sample 1 has a lower L* value when compared to Sample 2, Sample 1 has a deeper color when compared to Sample 2.

DATA FOR TOUCHNESS

| | Opposite Direction Toward Raising Fiber | |
|----------|---|------------------------------|
| | Static Friction Coefficient | Kinetic Friction Coefficient |
| Sample 1 | 1.7 | 1.3 |
| Sample 2 | 1.2 | 1.1 |

The touchness of the respective Samples is measured by the friction coefficient. The higher the static friction coefficient and the high the kinetic friction coefficient the better is the touchness quality. The friction coefficients were measured by using a friction coefficient tester of Toyosik Company with a 200g pendulum as is well known in the art.

Roughness (Appearance)

The roughness of the textile fibers of Samples 1 and 2 was measured by an optical microscope and a laser scanning microscope (Olimpus Company LECT 3100). The roughness property of Samples 1 and 2 relates to the prominence of the surface of the samples. As shown in the attached photographs, the surfacial prominence (roughness) of Sample 1 (Attachments 1 and 2) is smaller and more even than the surfacial prominence of Sample 2 (Attachments 3 and 4).

I hereby declare that all statements made herein of my own knowledge are true and that

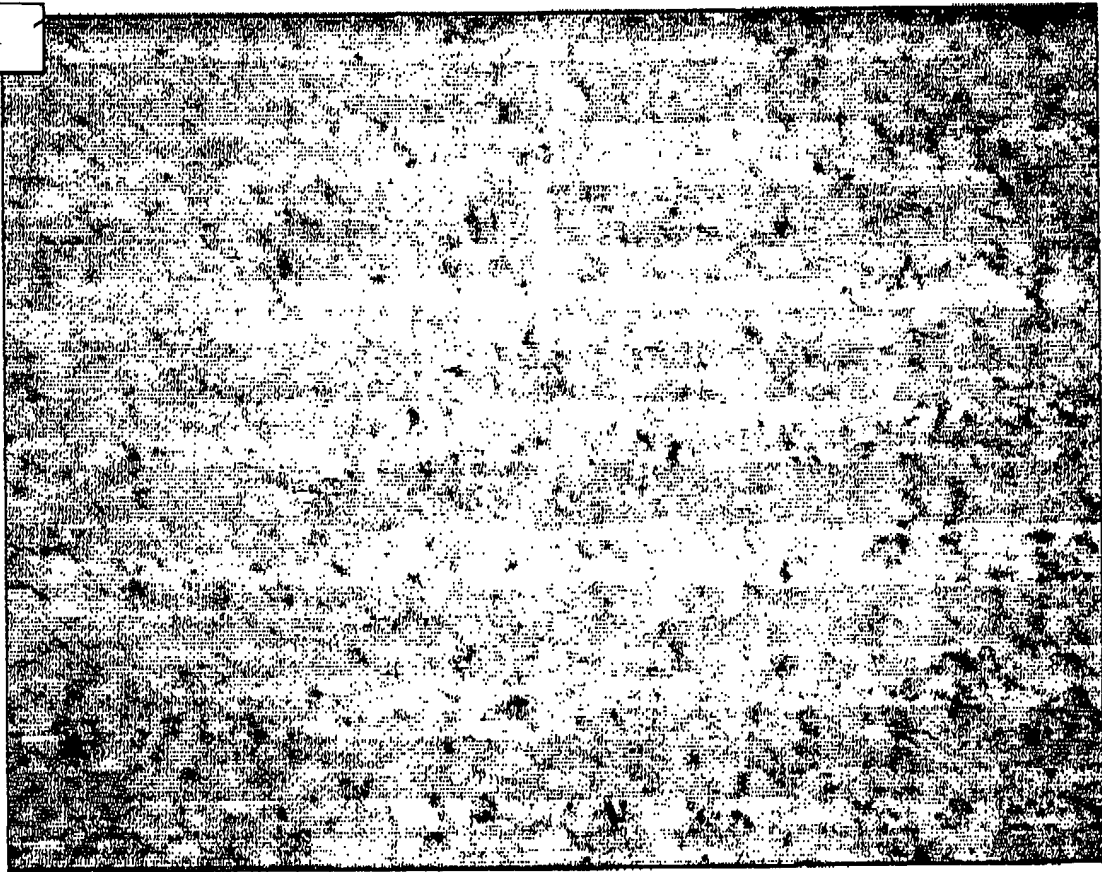
all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: _____

By: _____
HWANG, Young-Nam

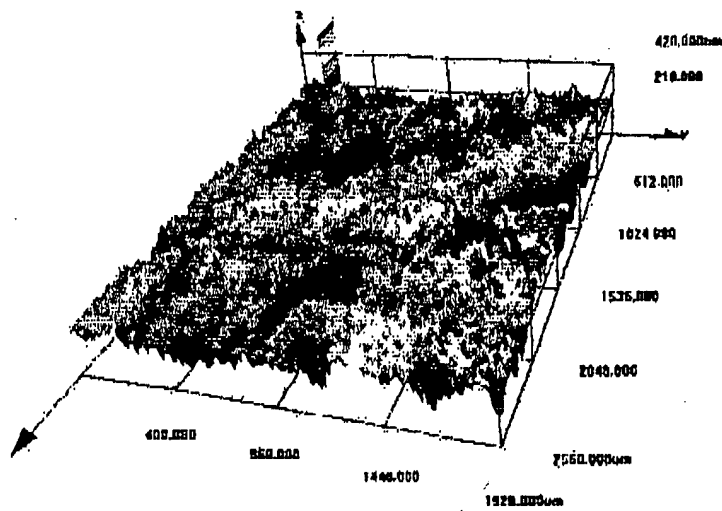
Attachment 1

Sample 1



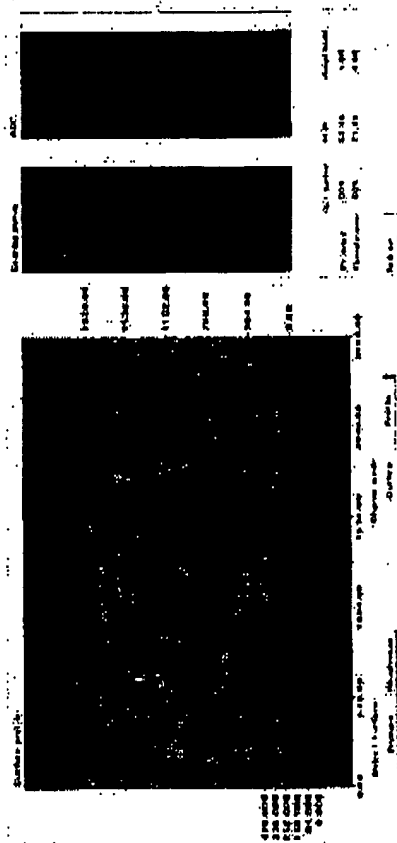
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Comment
Obj.: Sur
Zoom: 1.0x
Acq.: XYZ
Info.: CF-H-C

Roughness (Ra 혹은 Sa) Value : 32.83





Attachment 2



Objective Lens : MPLFLN 5x
Zoom : 1
Image Pixels : 1024 x 768
Amplifier : Contrast

| # | A-Data | SRa | SRV | SRz | SRz | SRz | SRa | SRa |
|---|--------|---------|---------|---------|-------|--------|--------|--------|
| 4 | | 118.898 | 183.889 | 303.857 | 0.000 | 32.832 | 42.273 | 42.273 |

| | |
|--------|---------|
| SRz/4s | 302.300 |
|--------|---------|

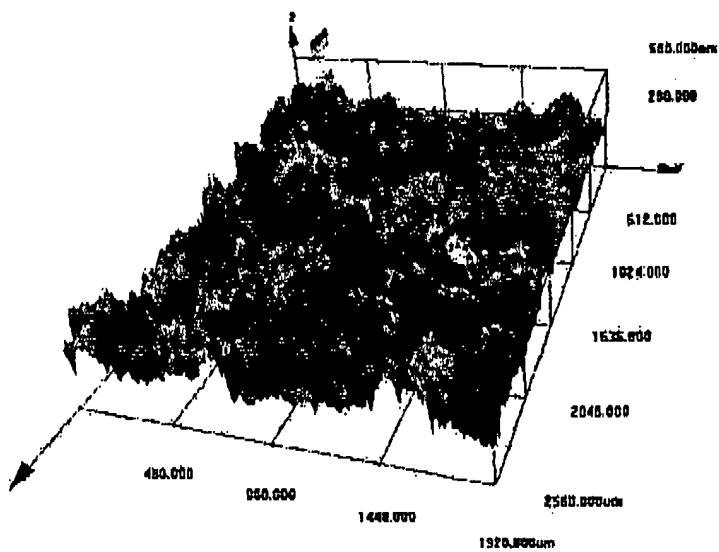
Attachment 3

Sample 2



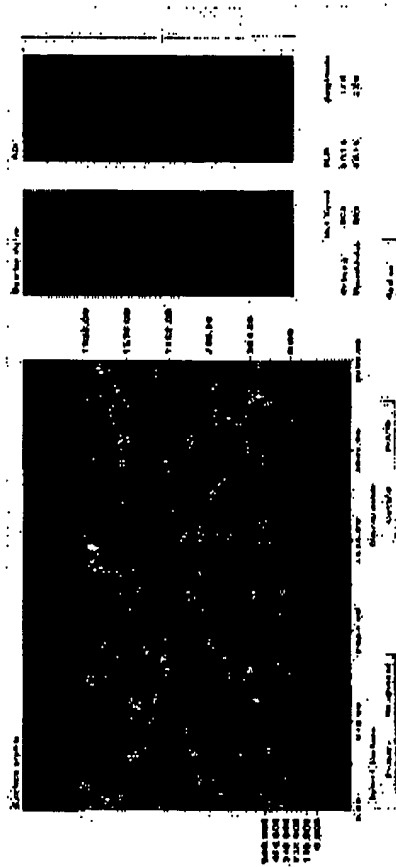
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Comment:
Obj: fix
Zoom: 1.0x
Acq: XYZ
Info: GE-H-C

Roughness (Ra 혹은 Sa) Value : 52.56





Attachment 4



Objective Lens : MPLFLN 5x
Zoom : 1
Image Pixels : 1024 x 768
Amplifier : Contrast

| # | Area | SPa | SPb | SPc | SPd | SPe | SPf |
|---|------|---------|---------|---------|-------|--------|--------|
| 5 | | 218.551 | 200.015 | 52.4188 | 0.000 | 52.568 | 88.427 |

| | |
|-----|---------|
| SPa | 508.039 |
|-----|---------|